Biographical Sketch

Name: Dr. Pitamber Mahanandia

Designation and Affiliation: Assistant Professor,
Physics & Astronomy
National Institute of Technology Rourkela,
Sundergarh, 769008 Odisha,India

Phone number: (0661)-2462730 (O), 09438435881 (M)

Email: pitam@nitrkl.ac.in, pmahanandia@gmail.com

Educational Qualification:

Ph.D. Physics (2008), Indian Institute of Science Bangalore,Karnataka,India
Graduate Aptitude Test in Engineering(GATE)-1999
M.Sc. Physics (1997), Sambalpur University, Sambalpur,Odisha,India
B.Sc. Phy Honors (1995), Sundergarh Govt. College, Sundergarh,Odisha,India

Research Experience:

Research Associate (April 2007 - March 2008), Department of Physics, Oakland University,Michigan,USA.

Post Doc Research (June 2008- January 2010) FB Chemise, Eduard-Zintl-Institut, Technical University Darmstadt, D-64287 Darmstadt, Germany

Visiting Professor(January2010-June 2010) Louisiana University at Lafayette 104 University Circle, Lafayette LA 70504, Louisiana,USA

Guest Scientist(August 2010-July -2011) Germany (Leibniz Institute of Polymer Research Dresden, Germany), Hohe Str. 6, D-01069 Dresden, Germany

Awards & Recognition

1. **Best Poster Award**: International Conference on Advanced Materials Design & Development)for the poster presentation which was held on 14-16th December 2005 in Goa, India.
   Title of the poster presentation: **Synthesis of multiwall carbon nanotubes. Pyrolysis assisted chemical vapour deposition.**
2. **The following is the cover story on nanotechnology webpage/**
   Credited to Dr. P. Mahanandia et al.
   http://nanotechweb.org/cws/article/yournews/56776
3. The following is the cover story on nanotechnology webpage/
   redited to Dr. P. Mahanandia and Dr. K. K. Nanda.
   http://nanotechweb.org/cws/article/tech/33725

Available Experimental Facilities

1.PL Micro Raman
2.ChemicalVapour Deposition
3. Solar Simulator
4. Electrochemical Setup
5.Spin Coating Unit
6.I-V Measurement Setup

Publication in Journals

1. Kadambinee Sa, Pitamber Mahanandia,Conducting reduced graphene oxide film as transparent electrode, Submitted to Thin Solid Films(2018).
2. *Injamul Alam, Kadambinee Sa, Sonali Das, B V R S Subrananyam, Jagatpati Raiguru,Budhhadeb Samanta, Pawan Kumar* and Pitamber Mahanandia,* Dielectric behavior of PZT/graphene oxide composites,Communicated to Advanced Functional Materials(2018).
3. Sonali Das[1], Kadambinee Sa[1], Injamul Alam[1] and Pitamber Mahanandia, Enhancement of photocurrent in Cu_2ZnSnS_4 quantum dot anchored multi-walled carbon nanotube for solar cell, Journal of Materials Science: Materials in Electronics(Accepted)
4. K. Sa, P. C. Mahakul, S. Saha, Pitamber Mahanandia, Investigation physical properties of of functionalized multiwalled carbon nanotubes -reduced graphene oxide/PMMA hybrid nanocomposite(Accepted,Polymer Science and Engineering,Wiley Publication). DOI:10.1002/pen.25084.
5. BamadevDas, KadambineeSa, Prakash Chandra Mohaku, B.V.R.S. Subramanyam, SonaliDas, InjamulAlam, JagatpatiRaiguru, Pitamber Mahanandia, Efficient Ultraviolet Photodetector device based on Modulated Wide Band Gap Type-II CuO/CdSe Core-Shell Nanowires, Superlattices and Microstructures 123 (2018) 234–241.
6. Sonali Das, KadambineeSa, InjamulAlam, Pitamber Mahanandia,Synthesis of CZTS QDs decorated reduced graphene oxide nanocomposite as possible absorber for solar cell, Materials Letters 232 (2018) 232–236.
7. Sonali Das, InjmulAlam, JagatpatiRaiguru, B.V.R.S. Subramanyam, Pitamber Mahanandia,A facile method to synthesize CZTSquantum dots for solar cell applications**,**Physica E: Low-dimensional Systems and Nanostructures 105 (2019) 19–24.
8. Kadambinee Sa , Prakash Chandra Mahakul , KarunaKar Nanda , Pitamber Mahanandia,Effect of ionic liquid functionalized carbon nanotubes on mechanical, thermal and electrical properties of carbon nanotubes-reduced graphene oxide/PMMA nanocomposites,Chemical Physics Letterm 706,76-81(2018).
9. P.C.Mahakul,K.Sa,B.V.R.S. Subramanyam, PitamberMahanandia, Mesoscopic investigation of the effect of MWCNT/rGO network on the performance of P3HT:PC60BM solar cells, Materials Chemistry and Physics 226 (2019) 113–117
10. Kadambinee Sa, Prakash C. Mahakul1, Bamadev Das, B.V.R.S. Subramanyam, Jonaki Mukherjee, SunirmalSaha, JagatpatiRaiguru, Khirod C. Patra, Karuna K. Nanda and Pitamber Mahanandia, Materials Letters ,211,335-338(2018).
11. P. C. Mahakul, Kadambinee Sa, Bamadev Das, Pitamber Mahanandia, Materials

Chemistry and Physics(2017),199,477-484.

12. P. C. Mahakul, Kadambinee Sa, Bamadev Das, B. V. R. S. Subramaniam,SunirmalSaha, BhaskarMoharana, JagatpatiRaiguru, Satyasiddha Dash, Jonaki Mukherjee, and Pitamber Mahanandia,J Mater Sci(2017) 52:5696–5707.

13. P. C. Mahakul, Pitamber Mahanandia, Int. J. of Renewable Energy Technology (IJRET),9(1/2):181(2018).

14. Kadambinee Sa, Prakash Chandra Mahakul, Pitamber Mahanandia, Physica solidi status –A, 1700467-6(2017). P. Mahanandia , K.K. Nanda, P. Simon, G. Heinrich, Chem. Commun., 50, 4613—4615(2014).

15. Barun K Barman, Pitamber Mahanandia and KarunaKar Nanda, RSC Advances, 3, 12621–12624(2013).

16. P. Mahanandia and K. K. Nanda, Applied Physics Letter,100, 022108 (2012).

17. Pitamber Mahanandia, J. J. Schneider, M. Engel, Bernd Stühn, K. K. Nanda, S. V.Subramanyam, Brillstein Journal of Nanotechnology 2011,*2*, 293–301.

18. Pitamber Mahanandia, P.N. Viswakarma, K.K. Nanda, P.V. Bhotla, S. V. Subramanyam, Bull. Mater. Sci., Vol. 33, No. 3, June 2010, pp. 1–6.

19. Pitamber Mahanandia, J. J. Schneider, M.Khaneft, B. Stühn, Tiago P. Peixoto,Barbara Drossel, Physical Chemistry Chemical Physics 12 (2010) 4407.

20.Pitamber Mahanandia , V. Arya, K. K. Nanda , P. V. Bhotla, S. V. Subramanyam, Material Science and Engineering B 164 (2009) 140-150.

21.Pitamber Mahanandia, L. T. Singh, K. K. Nanda, Review of Scientific Instruments, 79 (2008) 053909.

22. Pitamber Mahanandia& K. K. Nanda, Applied Physics Letters 93 (2008) 063105.

23.Pitamber Mahanandia, K. K. Nanda, Nanotechnology 19 (2008) 155602 (7pp).

24.Pitamber Mahanandia, K. K. Nanda, V. Prasad, S. V. Subramanyam, Materials Research Bulletin 43 (2008) 3252-3262.

25. Pitamber Mahanandia, P.N. Vishwakarma, K.K. Nanda, V. Prasad, K. Barai, A.K. Mondal, S. Sarangi, G. K. Dey and S.V. Subramanyam, Solid State Communications, 145 (2008) 143-148.

26. Pitamber Mahanandia, P.N. Vishwakarma, K.K. Nanda, V. Prasad, S.V. Subramanyam, S.K. Dev and P.V. Satyam, Materials Research Bulletin 41 (2006) 2311–2317.

Publication in Conference Proceedings

1. J Raiguru, BVRS Subramanyam, K Sa, I Alam, S Das, J Mukherjee, P C Mahakul, B Subudhi[1] and P Mahanandia "Impact of Annealing Temperature on the Phase of CZTS with the Variation in Surface Morphological Changes and Extraction of Optical Bandgap," Vol. 178, Conference 1, IOP Conf. Series: Materials Science and Engineering (2017) 012017 doi:10.1088/1757-899X/178/1/012017
2. Prakash Chandra Mahakul[1] and Pitamber Mahanandia "Structural and electrical characteristics of solution processed P3HT-carbon nanotube composite,"Vol. 178. Conference 1, IOP Conf. Series: Materials Science and Engineering (2017) 012017 doi10.1088/1757-899X/178/1/012024.
3. Kadambinee Sa, Prakash Chandra Mahakul, B. V. G. S. Ram Subrahmanyam, SunirmalSaha, Jonaki Mukherjee, and Pitamber Mahanandia, Scalable synthesis of reduced graphene oxide using $FeSO_4$,

AIP Conference Proceedings 1832, 050133 (2017); doi: 10.1063/1.4980366.

4. Pitamber Mahanandia and K. K. Nanda, **Carbon-Based Material for Low Temperature Detection** ,AIP Conference Proceedings Volume 1063(2008)91-97.
5. Kadambinee Sa, Prakash C. Mahakul, B.V.R.S. Subramanyam, Jagatpati Raiguru, Sonali Das, InjamulAlam, Pitamber Mahanandia, Effect of reduced graphene oxide-carbon nanotubes hybridnanofillers in mechanical properties of polymernanocomposites,IOP Conf. Series: Materials Science and Engineering338 (2018) 012055 doi:10.1088/1757-899X/338/1/012055.
6. S Das, K Sa, P C Mahakul, J Raiguru, I Alam, BVRS Subramanyam, P Mahanandia, Synthesis of quaternary chalcogenide CZTS nanoparticles by a hydrothermal route, IOP Conf. Series: Materials Science and Engineering 338 (2018) 012062 doi:10.1088/1757-899X/338/1/012062.
7. I Alam, K Sa, S das, J Raiguru, BVRSSubramanyam, PC Mahakul and P Mahanandia,Preparation of few layer graphene sheets (FLGS) prepared by an electrochemical method,IOP Conf. Series: Materials Science and Engineering 338 (2018) 012063 doi:10.1088/1757-899X/338/1/012063.
8. S. Das, K. Sa, I. Alam, P. C. Mahakul, J. Raiguru, B. V. R. S. Subramanyam, and P. Mahanandia,Synthesis and characterizations of Cu2ZnSnS4 nanoparticles/carbon nanotube composite as an efficient absorber material for solar cell application,AIP Conference Proceedings 1961, 020006 (2018); doi: 10.1063/1.5035199

Presentation in Conferences

1. National Meeting on Nano and Novel Materials (NANM2006) for the invited talk, which was held in Department of Physics, Centre for advanced study in physics**,** Punjab University, Chandigarh (India) from 8th-9th March2006.**Title of the talk presented**-Carbon Nanotubes: Its properties, application, synthesis and the challenges.
2. 8th International Conference on Nanostructured Materials "NANO-2006" held in August 20-25, 2006, Indian Institute of Science, Bangalore, India Title of the poster presentation: A **novel method to synthesize nano carbons**".
3. Advanced Nanomaterials, held in the Department of Physics, Indian Institute of Technology, Bombay, Powai from 8th – 10th January 2007, Title of the poster presentation: **Synthesis of entangled carbon nanotubes and aligned carbon nanotubes by a simple pyrolysis.**
4. The American Physical Society for the March Meeting 2008, from March 10–14, 2008; New Orleans, Louisiana, USA.Title of the poster presentation: **Consequences of magneto electric interactions on ferroelectric domain structures**.
5. International Bunsen Discussion Meeting on Polymer Interfaces: Science and Technology held in Technical University Darmstadt, Germany from August 31st to 1st September 2009.Title of the poster presentation: **Polymer Confinement Effects in Aligned Carbon Nanotubes Arrays.**

6. **NANO2014, Moscow State University,Russia**
7. **3rd International Conference on Mechanics of Composites (MECHCOMP3) to be held in Università di Bologna,Italy from 4-7th July,2017".**
8. **Invited Speaker,ICN 2018,Kottayam held from 11-13 May 2018.**

Sponsored Research Projects

1. Institute Fund for PL Micro Raman~Rs.2.0 Crore
2. DST,SERB, to investigate the effect of grain boundary on electrical properties of graphene prepared by electrochemical method and from Jan 2016-2020. (**Rs. 24,57,400/-)**
3. INDO-KOREA joint proposal, DST, International Cell, Novel photovoltaic cell made up of CZTS and graphene from July 2015- June 2018. (**Rs.30,47,160/-)**
4. DST,SERB for investigation of efficiency of CNTs/graphene hybrid inorganic photovoltaic cells from September 2014- August 2017. (**Rs. 27,90,463/-**)

Research Guidance

1. Dr.SunirmalSaha- PhD degree Awarded in 2017
2. Kadambinee Sa - PhD degree awarded in 2018)
3. Dr.P.C.Mahakul – PhD awarded in 2018
4. Mr. Bamadev Das- Awarded M.Tech.Research Thesis in 2016
5. Deepankar Panda- Awarded M.Tech.Research (As Co-Supervisor)
6. BVRS Subramanyam- (PhD Continuing)
7. JagatPatiRaiguru- (PhD Continuing)
8. Sonali Das- (PhD Continuing)
9. InjamulAlam- (PhD Continuing)
10. ShuhashriSubudhi (PhD Continuing)
11. ManoranjanMondal (PhD Continuing)
12. Santoshini Patra (PhD Continuing)

M.Sc.Research Project Guidance

Title-Preparation of Graphene Sheets by Microwave Irradiation.
Title-Synthesis and Characterization of CuO/graphene oxide composite.
Title-Unzipping of Multiwalled Carbon Nanotubes.
Title-reparation and Characterization of Carbon Nanotubes Barium Titanate Composites.
Title-Synthesis of carbon nanotube and the study of transfer characteristics of FET configurred CNT device.
Title -Preparation of long aligned carbon nanotubes and study its physical properties.
Title-Nano/Micro fabrication using Lithography.
Title-Preparation and Characterization of graphene transition metal oxides.
Title-Preparation of helical carbon nanotubes.

Title-Preparation of carbon nanoribbond

Teaching Experience

No.	Position	Organization	Title of course taught	Postgraduate/ Undergraduate	Sole instructor or with others	Academic Year
1	Asst.Prof.	NIT,Rourkela	Waves and Oscillations	Undergraduate	Sole Instructor	2011-2012
2	Asst.Prof.	NIT,Rourkela	Atomic and Molecular Physics	Postgraduate	Sole Instructor	2011-2012 &2012-2013
3	Asst.Prof.	NIT,Rourkela	Physics-I	Undergraduate	Sole Instructor	2012-2013 .2013-2014 &2014-2015
4	Asst.Prof.	NIT,Rourkela	Thermodynamics	Under Graduate	Sole Instructor	2012-2013, 2016-2017
5	Asst.Prof.	NIT,Rourkela	Properties of Matter	Undergraduate	Sole Instructor	2012-2013
6	Asst.Prof.	NIT,Rourkela	X-Ray techniques for Structure Evaluation	Undergraduate	Sole Instructor	2013-2014
7	Asst.Prof.	NIT,Rourkela	Mesoscopic Physics	Postgraduate	Sole Instructor	2013-2014 2015-2016 2018-2019
8	Asst.Prof.	NIT,Rourkela	Fundamental of Thermal & Statistical Physics	Undergraduate	Sole Instructor	2014-2015
9	Asst.Prof.	NIT Rourkela	Classical Mechanics	Post graduate Level	Sole Instructor	2017-2018, 2018-2019
10	Asst.Prof.	NIT Rourkela	Physics-II	Undergraduate	Sole Instructor	2016-2017 2017-2018